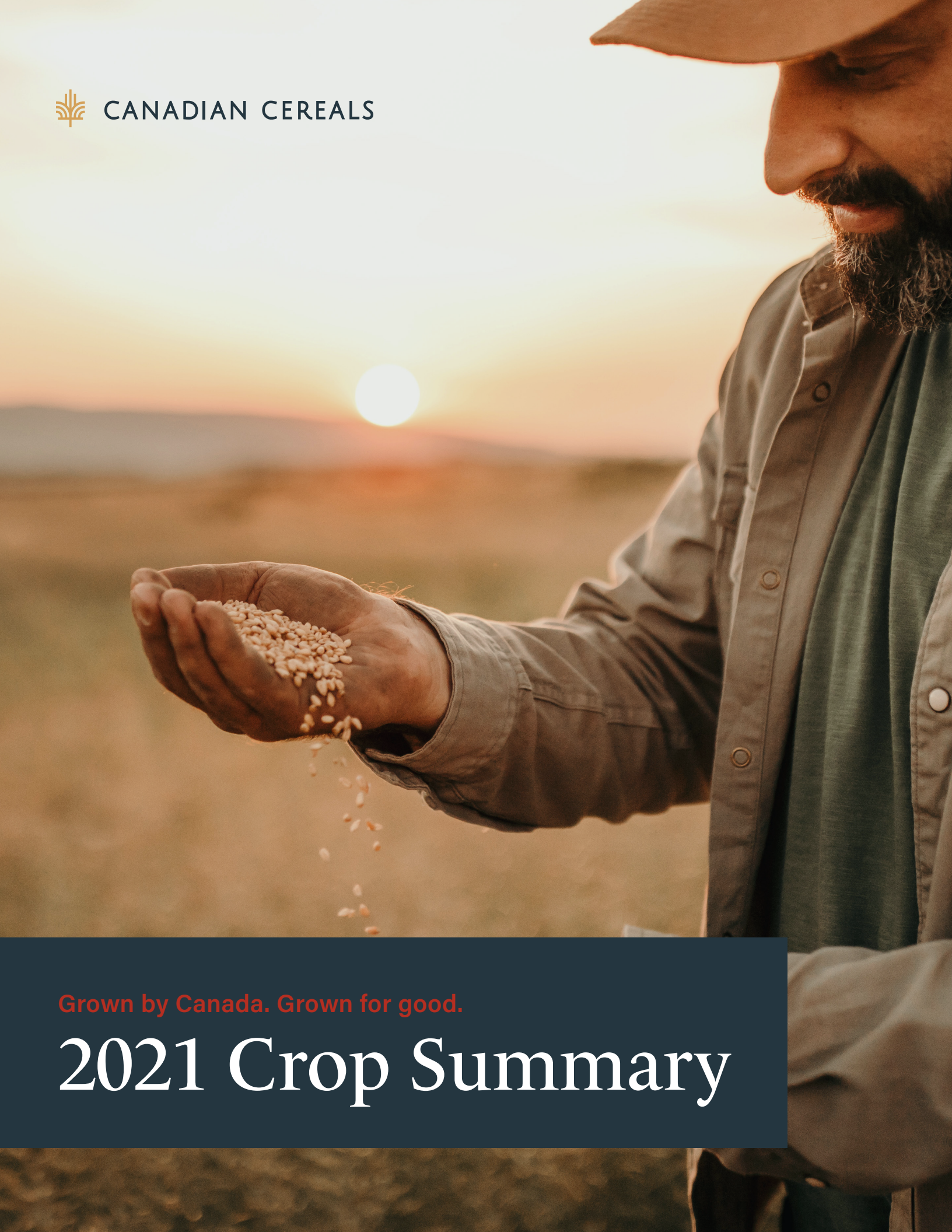


CANADIAN CEREALS

Grown by Canada. Grown for good.

2021 Crop Summary

2021-22

CWRS Canada Western Red Spring

CWRS

Major Grading Factors

	No. 1	No. 2	No. 3	All Grades
Number of Samples Graded	2188	812	194	3354
% of all grades	65.8	24.2	5.5	100
Grading Factor*		% of grade		
Non-HVK	n/a	16.8	0.0	16.8
Mildew	n/a	10.0	2.8	13.4
Severely Sprouted	n/a	1.2	1.0	4.7

Top Five CWRS Varieties Grown in 2021

1. AAC Brandon
2. AAC Viewfield
3. CDC Landmark
4. AAC Elie
5. AAC Redberry

Source: Canadian Grain Commission
*A sample can be downgraded for more than one factor

CWRS

Protein Content, %

Province	Mean	Standard Deviation
No. 1 CWRS		
Manitoba	14.9	1.2
Saskatchewan	14.8	1.4
Alberta and B.C.	14.9	1.5
Western Canada	14.9	1.4
No. 2 CWRS		
Manitoba	14.3	1.0
Saskatchewan	14.2	1.4
Alberta and B.C.	14.2	1.7
Western Canada	14.2	1.4
All Grades		
Manitoba	14.7	1.1
Saskatchewan	14.6	1.4
Alberta and B.C.	14.8	1.6
Western Canada	14.7	1.4

Grading factor and protein content analysis conducted by Canadian Grain Research Laboratory as of 11/09/2021, basis the Harvest Sample Program.

WESTERN COMPOSITE

No. 1 CWRS

Canada Western Red Spring

Quality Parameter [a]	2021 Western Composite [b]	2020 Western Composite [b]
Wheat		
Test Weight, kg/hL	82.6	83.2
Weight Per 1000 Kernels, g	33.5	37.0
Protein Content, %	15.3	13.2
Protein Content, % (dry matter basis)	17.6	15.3
Ash Content, %	1.39	1.51
Falling Number, s	354	392
Particle Size Index, %	48	48
Milling Flour Yield Bühler Laboratory Mill		
Total Products Basis, %	75.0	74.5
0.50% Ash Basis, %	79.0	77.0

FIGURE 1A

2021 Western Canadian CWRS Composite Regions

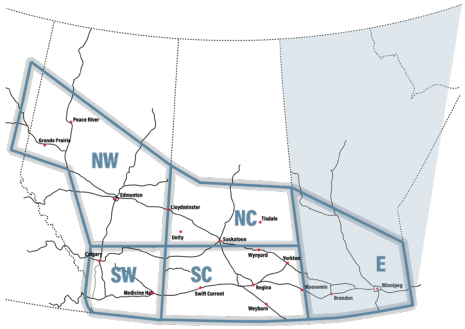
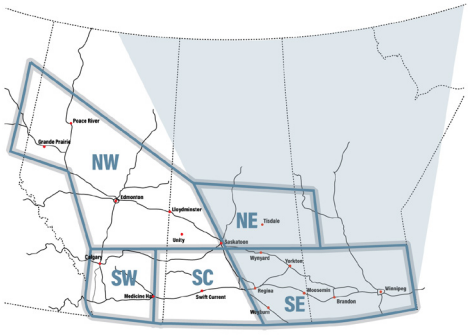


FIGURE 1B

2020 Western Canadian CWRS Composite Regions



Quality Parameter [a]	2021 Western Composite [b]			2020 Western Composite [b]		
Flour [c]						
Extraction, %	Straight Grade 75.0%	74%	60%	Straight Grade 74.5%	74%	60%
Protein Content, %	14.7	14.5	14.0	12.5	12.4	11.9
Protein Loss, %	0.6	0.8	1.3	0.7	0.8	1.3
Wet Gluten Content, %	38.0	38.3	37.5	35.7	35.9	33.9
Gluten Index, %	97	96	96	87	90	92
Ash Content, %	0.42	0.40	0.38	0.45	0.46	0.40
Colour - L*	84.5	84.8	85.5	85.4	85.1	85.9
Starch Damage, UCD	23.6	23.4	23.6	26.6	26.7	27.0
Amylograph Peak Viscosity, BU	466	491	497	659	677	716
Farinogram [c]						
Absorption, %	65.6	65.5	65.0	67.2	67.8	67.0
Dough Development Time (DDT), min	8.8	9.3	10.7	8.1	7.9	7.8
Stability, min	46.9	48.8	48.7	14.2	14.1	17.2
Mixing Tolerance Index, (MTI) BU	10	10	2	19	19	17
Extensogram						
Maximum Resistance (Rmax), BU	754	733	817	534	532	569
Extensibility (length), cm	19.5	21.5	18.3	21.8	20.3	19.8
Area, cm^2	179	193	183	146	132	144
Alveogram						
P (height x 1.1), mm	112	126	129	133	137	144
L (length), mm	115	132	125	93	96	85
P/L	0.97	0.95	1.03	1.43	1.43	1.69
W, 10-4 J	504	614	621	462	490	466
Ie, %	73.1	70.6	72.6	66.8	67.2	66.5
Baking (No Time Dough)						
Absorption, %	69	n/a	n/a	71	n/a	n/a
Mixing Time, min	7.8	n/a	n/a	6.3	n/a	n/a
Specific Volume, cm^3/g	8.3	n/a	n/a	7.0	n/a	n/a
Total Bread Score (out of 10)	9.2+[c]	n/a	n/a	9.4	n/a	n/a
Baking (Sponge & Dough)						
Absorption, %	68	n/a	67	70	n/a	68
Mixing Time, min	9.1	n/a	9.5	8.2	n/a	7.5
Specific Volume, cm^3/g	7.3	n/a	7.6	6.6	n/a	6.7
Total Bread Score (out of 10)	9.2+[c]	n/a	9.7+[c]	9.9	n/a	10.0
Noodles (Fresh Yellow Alkaline)						
Colour (3h / 24h) L*	n/a	72.8 / 68.2	74.5 / 70.2	n/a	73.5 / 68.2	75.8 / 70.6
a*	n/a	0.34 / 0.80	0.20 / 0.56	n/a	0.20 / 0.96	-0.13 / 0.58
b*	n/a	25.1 / 23.5	25.2 / 23.9	n/a	26.5 / 25.3	26.2 / 25.3
Cooked Noodle Max. Cutting Stress g/mm^2						
Cook Time - 3.5 min	n/a	37.7	35.4	n/a	41.8	39.0
Noodles (Fresh White Salted)						
Colour (3h / 24h) L*	n/a	74.4 / 70.9	75.6 / 72.5	n/a	75.5 / 72.2	76.7 / 74.0
a*	n/a	2.00 / 2.41	1.71 / 1.95	n/a	1.60 / 2.07	1.18 / 1.56
b*	n/a	23.7 / 23.1	23.9 / 23.3	n/a	25.2 / 24.5	25.1 / 24.6
Cooked Noodle Max. Cutting Stress g/mm^2						
Cook Time - 3.5 min	n/a	27.0	25.1	n/a	26.2	24.6

[a] Data are reported on a 13.5% moisture basis for wheat and a 14.0% moisture basis for flour except Alveogram is on a 15.0% moisture basis and starch damage is as is.

[b] Refer to crop region maps (Figures 1A, 1B, non-shaded area).

[c] Break and shred received a higher score (+) as it was bigger compared to the 2020 composite.

n/a Not available (testing will not be conducted).

Harvest assessment samples representing grain available for export, milling, analytical, and end product analysis conducted by Cereals Canada.

EASTERN COMPOSITE

No. 1 CWRS

Canada Western Red Spring

Quality Parameter [a]	2021 Eastern Composite [b]	2020 Eastern Composite [b]
Wheat		
Test Weight, kg/hL	81.4	81.8
Weight Per 1000 Kernels, g	32.7	36.3
Protein Content, %	15.3	13.7
Protein Content, % (dry matter basis)	17.7	15.9
Ash Content, %	1.43	1.55
Falling Number, s	340	413
Particle Size Index, %	49	50

Milling Flour Yield Bühler Laboratory Mill		
Total Products Basis, %	76.0	76.0
0.50% Ash Basis, %	79.0	77.0

FIGURE 1A

2021 Western Canadian CWRS Composite Regions

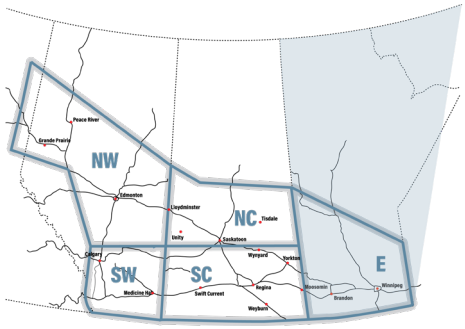
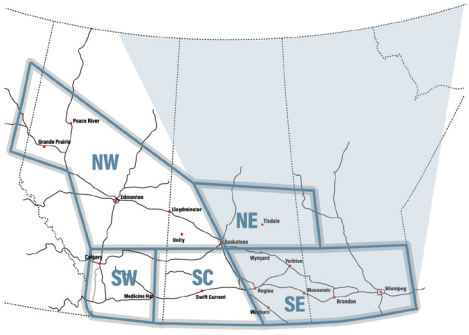


FIGURE 1B

2020 Western Canadian CWRS Composite Regions



[a] Data are reported on a 13.5% moisture basis for wheat and a 14.0% moisture basis for flour except Alveogram is on a 15.0% moisture basis and starch damage is as is.

[b] Refer to crop region maps (Figures 1A, 1B, shaded area). n/a = Not available (testing will not be conducted).

[c] Break and shred received a higher score (+) as it was bigger compared to the 2020 composite.

n/a Not available (testing will not be conducted).

Harvest assessment samples representing grain available for export, milling, analytical, and end product analysis conducted by Cereals Canada.

Quality Parameter [a]	2021 Eastern Composite [b]		2020 Eastern Composite [b]	
Flour [c]				
Extraction, %	Straight Grade 76.0%	74%	Straight Grade 76.0%	74%
Protein Content, %	14.3	14.2	13.0	12.8
Protein Loss, %	1.0	1.1	0.7	0.9
Wet Gluten Content, %	38.2	37.6	37.1	35.9
Gluten Index, %	97	98	92	93
Ash Content, %	0.44	0.39	0.48	0.42
Colour - L*	84.5	85.0	84.8	85.4
Starch Damage, UCD	23.1	22.6	25.7	26.3
Amylograph Peak Viscosity, BU	526	558	682	660
Farinogram				
Absorption, %	63.5	63.4	66.3	66.0
Dough Development Time (DDT), min	8.7	8.7	7.7	8.0
Stability, min	43.8	50.1	13.5	15.4
Mixing Tolerance Index, (MTI) BU	17	16	18	19
Extensogram				
Maximum Resistance (Rmax), BU	608	720	527	615
Extensibility (length), cm	24.1	22.7	21.6	20.6
Area, cm^2	188	196	145	159
Alveogram				
P (height x 1.1), mm	106	105	117	125
L (length), mm	143	134	123	112
P/L	0.74	0.78	0.95	1.12
W, 10-4 J	578	552	516	519
Ie, %	73.1	73.0	68.1	69.7
Baking (No Time Dough)				
Absorption, %	67	n/a	69	n/a
Mixing Time, min	7.8	n/a	6.3	n/a
Specific Volume, cm^3/g	8.2	n/a	7.3	n/a
Total Bread Score (out of 10)	9.6	n/a	9.9	n/a
Baking (Sponge & Dough)				
Absorption, %	66	n/a	68	n/a
Mixing Time, min	9.6	n/a	7.7	n/a
Specific Volume, cm^3/g	7.7	n/a	6.9	n/a
Total Bread Score (out of 10)	9.6+[c]	n/a	9.8	n/a
Noodles (Fresh Yellow Alkaline)				
Colour (3h / 24h) L*	n/a	74.1 / 69.1	n/a	73.4 / 68.9
a*	n/a	0.30 / 0.65	n/a	0.25 / 0.78
b*	n/a	25.0 / 23.5	n/a	25.9 / 24.8
Cooked Noodle Max. Cutting Stress g/mm^2				
Cook Time - 3.5 min	n/a	36.9	n/a	42.0
Noodles (Fresh White Salted)				
Colour (3h / 24h) L*	n/a	75.2 / 72.0	n/a	75.1 / 71.3
a*	n/a	2.11 / 2.36	n/a	1.88 / 2.32
b*	n/a	23.8 / 23.0	n/a	24.9 / 24.5
Cooked Noodle Max. Cutting Stress g/mm^2				
Cook Time - 3.5 min	n/a	26.5	n/a	27.2

PRAIRIE COMPOSITE

No. 2 CWRS

Canada Western Red Spring

Quality Parameter [a]	2021 Prairie Composite [b]	2020 Prairie Composite [b]
Wheat		
Test Weight, kg/hL	80.7	82.4
Weight Per 1000 Kernels, g	34.0	37.8
Protein Content, %	14.8	13.2
Protein Content, % (dry matter basis)	17.1	15.3
Ash Content, %	1.42	1.56
Falling Number, s	308	368
Particle Size Index, %	48	51
Milling Flour Yield Bühler Laboratory Mill		
Total Products Basis, %	75.7	75.5
0.50% Ash Basis, %	79.2	76.0

FIGURE 1A

2021 Western Canadian Prairie Composite Regions

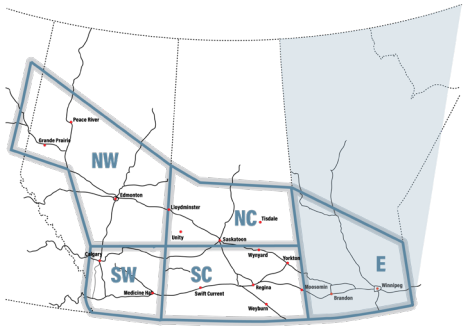
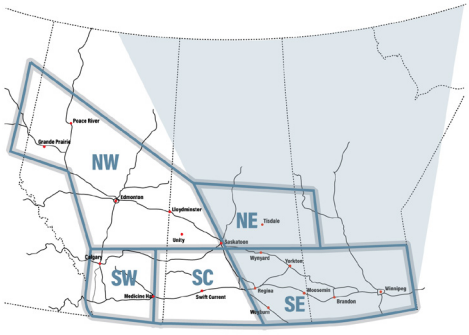


FIGURE 1B

2020 Western Canadian Prairie Composite Regions



[a] Data are reported on a 13.5% moisture basis for wheat and a 14.0% moisture basis for flour except Alveogram is on a 15.0% moisture basis and starch damage is as is.

[b] Refer to crop region maps (Figures 2A, 2B).

[c] Break and shred received a higher score (+) as it was bigger compared to the 2020 composite.

n/a Not available (testing will not be conducted).

Harvest assessment samples representing grain available for export, milling, analytical, and end product analysis conducted by Cereals Canada.

Quality Parameter [a]	2021 Prairie Composite [b]		2020 Prairie Composite [b]	
Flour				
Extraction, %	Straight Grade 75.7%	74%	Straight Grade 75.5%	74%
Protein Content, %	13.9	13.9	12.5	12.3
Protein Loss, %	0.9	0.9	0.6	0.9
Wet Gluten Content, %	36.8	37.3	35.1	35.3
Gluten Index, %	97	96	89	85
Ash Content, %	0.43	0.40	0.49	0.46
Colour - L*	84.1	84.8	85.0	85.3
Starch Damage, UCD	23.5	22.4	26.1	26.0
Amylograph Peak Viscosity, BU	350	336	451	464
Farinogram				
Absorption, %	64.0	63.6	66.4	66.2
Dough Development Time (DDT), min	7.0	7.2	7.2	8.2
Stability, min	15.7	19.3	12.0	12.8
Mixing Tolerance Index, (MTI) BU	16	15	20	24
Extensogram				
Maximum Resistance (Rmax), BU	510	572	448	517
Extensibility (length), cm	25.1	24.6	23.0	21.2
Area, cm^2	161	180	131	136
Alveogram				
P (height x 1.1), mm	107	103	121	125
L (length), mm	100	136	108	106
P/L	1.07	0.76	1.12	1.18
W, 10-4 J	431	527	464	478
Ie, %	72.3	71.5	65.7	66.4
Baking (No Time Dough)				
Absorption, %	67	n/a	70	n/a
Mixing Time, min	7.4	n/a	5.8	n/a
Specific Volume, cm^3/g	8.0	n/a	6.8	n/a
Total Bread Score (out of 10)	9.0+[c]	n/a	9.4	n/a
Baking (Sponge & Dough)				
Absorption, %	66	n/a	69	n/a
Mixing Time, min	8.7	n/a	7.7	n/a
Specific Volume, cm^3/g	7.8	n/a	7.0	n/a
Total Bread Score (out of 10)	9.3+[c]	n/a	10.0	n/a
Noodles (Fresh Yellow Alkaline)				
Colour (3h / 24h) L*	n/a	73.2 / 68.7	n/a	72.8 / 68.0
a*	n/a	0.34 / 0.77	n/a	0.38 / 1.12
b*	n/a	24.6 / 23.5	n/a	25.6 / 24.6
Cooked Noodle Max. Cutting Stress g/mm^2				
Cook Time - 3.5 min	n/a	35.6	n/a	39.6
Noodles (Fresh White Salted)				
Colour (3h / 24h) L*	n/a	74.2 / 70.8	n/a	75.6 / 71.6
a*	n/a	1.89 / 2.30	n/a	1.61 / 2.08
b*	n/a	23.1 / 22.4	n/a	23.7 / 23.0
Cooked Noodle Max. Cutting Stress g/mm^2				
Cook Time - 3.5 min	n/a	24.9	n/a	27.4

2021-22

CWAD Canada Western Amber Durum

CWAD Major Grading Factors

	No. 1	No. 2	No. 3	No. 4	No. 5	All Grades
Number of Samples Graded	299	240	169	35	17	769
% of all grades	38.9	31.2	22	4.6	2.2	100
Grading Factor*	% of grade					
Test Weight	n/a	17.0	7.3	0.8	0.0	25.1
Non-HVK	n/a	11.2	7.5	2.6	0.0	21.5
Mildew	n/a	3.3	2.0	0.2	0.1	5.8
Severely Sprouted	n/a	1.4	2.7	0.1	0.3	4.6

Source: Canadian Grain Commission
*A sample can be downgraded for more than one factor

Top Five CWAD Varieties Grown in 2021

1. Transcend
2. CDC Precision
3. Brigade
4. AAC Spitfire
5. AAC Stronghold

CWAD Protein Content, %

Province	Mean	Standard Deviation
No. 1 CWAD		
Saskatchewan	15.6	1.4
Alberta and B.C.	16.3	1.4
Western Canada	15.7	1.4
No. 2 CWAD		
Saskatchewan	15.8	2.0
Alberta and B.C.	15.9	1.8
Western Canada	15.8	1.9
No. 3 CWAD		
Saskatchewan	15.7	2.2
Alberta and B.C.	14.8	1.6
Western Canada	15.5	2.0
All Grades		
Saskatchewan	15.7	1.8
Alberta and B.C.	15.7	1.7
Western Canada	15.7	1.8

Grading factor and protein content analysis conducted by Canadian Grain Research Laboratory as of 11/09/2021, basis the Harvest Sample Program.

PRAIRIE COMPOSITE

No. 1 CWAD

Canada Western Amber Durum

Quality Parameter [a]	2021 Prairie Composite [b]	2020 Prairie Composite [b]
Wheat		
Test Weight, kg/hL	81.0	81.6
Weight Per 1000 Kernels, g	38.8	41.1
Vitreous Kernels, %	90	96
Protein Content, %	15.8	14.1
Protein Content, % (dry matter basis)	18.3	16.3
Ash Content, %	1.59	1.61
Falling Number, s	469	470
Particle Size Index, %	37	35
Milling Semolina Yield Bühler Laboratory Mill		
Total Milling Yield, %	67.8	68.3
Semolina Yield, %	63.2	64.1
Semolina		
Protein Content, %	15.0	13.1
Protein Loss, %	0.9	1.0
Wet Gluten Content, %	37.8	36.5
Gluten Index, %	76	63
Ash Content, %	0.71	0.71
Yellow Pigment Content, ppm	11.3	11.5
Colour - b* (yellowness)	33.6	31.4
Granulation		
> 425 µm, %	1.0	0.7
> 250 µm, %	52.6	47.5
> 180 µm, %	32.2	32.6
> 150 µm, %	7.5	8.1
< 150 µm, %	6.7	11.0
Semolina Speck Count per 50 cm²		
Total Specks	6	7
Dark Specks	1	1
Large Specks (≥0.06 mm²)	3	5
Alveogram		
P (height x 1.1), mm	105	86
L (length), mm	70	95
P/L	1.50	0.91
W, 10-4 J	273	264
Ie, %	57.4	54.7
Spaghetti		
Firmness @ 9 min cook time, g	1058	803
Cooking Loss, %	4.73	4.50
Colour L*	72.7	73.3
a*	5.16	4.88
b*	65.8	67.4

FIGURE 2A

2021 Western Canadian Prairie Composite Regions

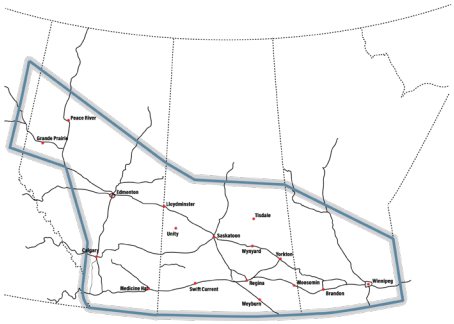
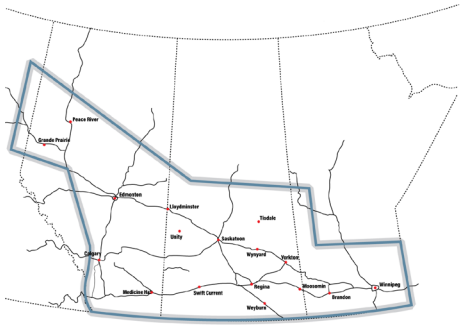


FIGURE 2B

2020 Western Canadian Prairie Composite Regions



[a] Data are reported on a 13.5% moisture basis for wheat and a 14.0% moisture basis for semolina except Alveogram is reported on a 15.0% moisture basis.

[b] Refer to crop region maps (Figures 2A, 2B).

Harvest assessment samples representing grain available for export, milling, analytical, and end product analysis conducted by Cereals Canada.

PRAIRIE COMPOSITE

No. 2 CWAD

Canada Western Amber Durum

Quality Parameter [a]	2021 Prairie Composite [b]	2020 Prairie Composite [b]
Wheat		
Test Weight, kg/hL	79.3	80.5
Weight Per 1000 Kernels, g	37.6	38.5
Vitreous Kernels, %	84	94
Protein Content, %	16.1	13.8
Protein Content, % (dry matter basis)	18.6	15.9
Ash Content, %	1.60	1.66
Falling Number, s	358	450
Particle Size Index, %	35	35
Milling Semolina Yield Bühler Laboratory Mill		
Total Milling Yield, %	67.2	66.6
Semolina Yield, %	62.2	62.4
Semolina		
Protein Content, %	15.2	12.9
Protein Loss, %	0.9	0.9
Wet Gluten Content, %	38.1	33.7
Gluten Index, %	80	64
Ash Content, %	0.71	0.75
Yellow Pigment Content, ppm	11.4	11.5
Colour - b* (yellowness)	33.0	31.3
Yellow Pigment Content, ppm		
> 425 µm, %	0.6	0.6
> 250 µm, %	49.7	47.2
> 180 µm, %	32.7	33.1
> 150 µm, %	8.2	8.0
< 150 µm, %	8.8	11.1
Semolina Speck Count per 50 cm²		
Total Specks	6	7
Dark Specks	1	1
Large Specks (≥0.06 mm²)	3	4
Alveogram		
P (height x 1.1), mm	101	86
L (length), mm	78	97
P/L	1.29	0.89
W, 10-4 J	288	266
Ie, %	59.3	55.2
Spaghetti		
Firmness @ 9 min cook time, g	1201	814
Cooking Loss, %	4.48	4.84
Colour L*	73.3	73.4
a*	5.38	4.66
b*	65.9	68.0

FIGURE 2A

2021 Western Canadian Prairie Composite Regions

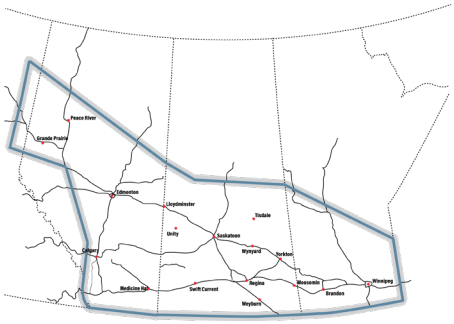
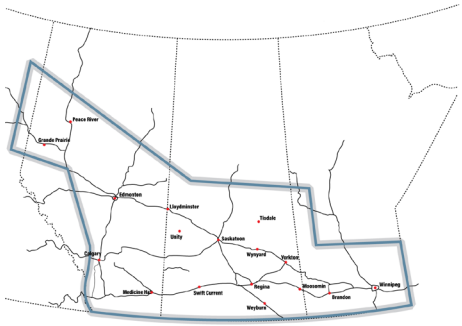


FIGURE 2B

2020 Western Canadian Prairie Composite Regions



[a] Data are reported on a 13.5% moisture basis for wheat and a 14.0% moisture basis for semolina except Alveogram is reported on a 15.0% moisture basis.

[b] Refer to crop region maps (Figures 2A, 2B).

Harvest assessment samples representing grain available for export, milling, analytical, and end product analysis conducted by Cereals Canada.

PRAIRIE COMPOSITE

No. 3 CWAD

Canada Western Amber Durum

Quality Parameter [a]	2021 Prairie Composite [b]
Wheat	
Test Weight, kg/hL	78.3
Weight Per 1000 Kernels, g	36.5
Vitreous Kernels, %	68
Protein Content, %	16.2
Protein Content, % (dry matter basis)	18.7
Ash Content, %	1.56
Falling Number, s	228
Particle Size Index, %	34
Milling Semolina Yield Bühler Laboratory Mill	
Total Milling Yield, %	67.4
Semolina Yield, %	62.1
Semolina	
Protein Content, %	15.2
Protein Loss, %	1.0
Wet Gluten Content, %	38.4
Gluten Index, %	69
Ash Content, %	0.69
Yellow Pigment Content, ppm	11.9
Colour - b* (yellowness)	33.0
Yellow Pigment Content, ppm	
> 425 µm, %	0.9
> 250 µm, %	50.6
> 180 µm, %	32.1
> 150 µm, %	7.6
< 150 µm, %	8.8
Semolina Speck Count per 50 cm²	
Total Specks	6
Dark Specks	1
Large Specks (≥0.06 mm²)	4
Alveogram	
P (height x 1.1), mm	99
L (length), mm	86
P/L	1.15
W, 10-4 J	303
Ie, %	60.1
Spaghetti	
Firmness @ 9 min cook time, g	1161
Cooking Loss, %	4.73
Colour L*	71.3
a*	5.25
b*	64.8

FIGURE 2A

2021 Western Canadian Prairie Composite Regions

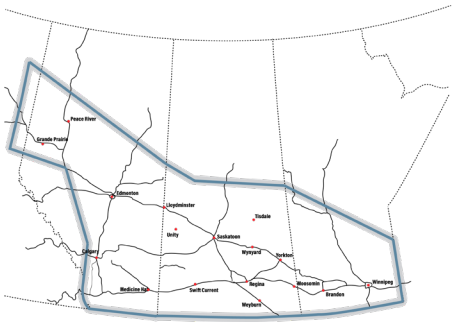
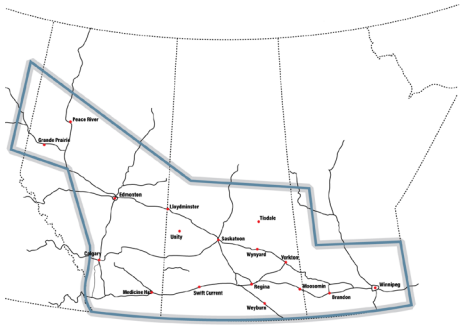


FIGURE 2B

2020 Western Canadian Prairie Composite Regions



[a] Data are reported on a 13.5% moisture basis for wheat and a 14.0% moisture basis for semolina except Alveogram is reported on a 15.0% moisture basis.

[b] Refer to crop region maps (Figures 2A, 2B).

Harvest assessment samples representing grain available for export, milling, analytical, and end product analysis conducted by Cereals Canada.

2021-22

CPSR Canada Prairie Spring Red

CPSR Major Grading Factors

	No. 1	No. 2	All Grades
Number of Samples Graded	116	15	144
% of all grades	80.6	10.4	100
Grading Factor*		% of grade	
Frost	n/a	8.0	8.3
Midge	n/a	2.0	7.4

Source: Canadian Grain Commission
*A sample can be downgraded for more than one factor

Top Five CPSR Varieties Grown in 2021

1. AAC Penhold
2. Accelerate
3. AAC Goodwin
4. SY Rowyn
5. 5700PR

CPSR Protein Content, %

Province	Mean	Standard Deviation
No. 1 CPSR		
Manitoba	NS	NS
Saskatchewan	NS	NS
Alberta and B.C.	13.6	1.5
Western Canada	13.5	1.5
No. 2 CPSR		
Manitoba	NS	NS
Saskatchewan	NS	NS
Alberta and B.C.	NS	NS
Western Canada	NS	NS
All Grades		
Manitoba	NS	NS
Saskatchewan	NS	NS
Alberta and B.C.	13.6	1.4
Western Canada	13.6	1.4

NS = Not Sufficient.
Insufficient number of samples to generate a representative sample

Grading factor and protein content analysis conducted by Canadian Grain Research Laboratory as of 11/09/2021, basis the Harvest Sample Program.

PRAIRIE COMPOSITE

No. 1 CPSR

Canada Prairie Spring Red

Quality Parameter [a]	2021 Prairie Composite [b]	2020 Prairie Composite [b]
Wheat		
Test Weight, kg/hL	82.0	81.8
Weight Per 1000 Kernels, g	40.8	42.7
Protein Content, %	14.1	12.1
Protein Content, % (dry matter basis)	16.3	14.0
Ash Content, %	1.38	1.55
Falling Number, s	401	391
Particle Size Index, %	50	51
Milling Flour Yield Bühler Laboratory Mill		
Total Products Basis, %	74.8	76.3
0.50% Ash Basis, %	75.8	77.3

FIGURE 2A

2021 Western Canadian Prairie Composite Regions

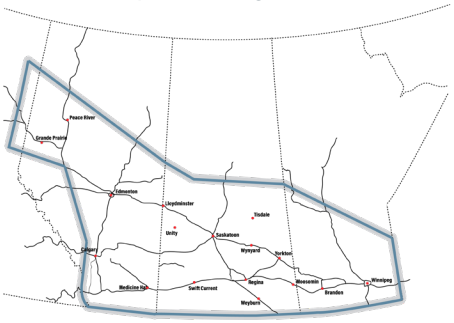
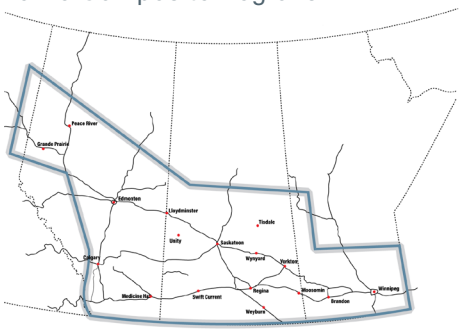


FIGURE 2B

2020 Western Canadian Prairie Composite Regions



Quality Parameter [a]	2021 Prairie Composite [b]		2020 Prairie Composite [b]	
Flour [c]				
Extraction, %	Straight Grade 74.8%	74%	Straight Grade 76.3%	74%
Protein Content, %	13.5	13.3	11.2	11.0
Protein Loss, %	0.6	0.8	0.9	1.1
Wet Gluten Content, %	34.9	34.6	31.0	30.8
Gluten Index, %	98	98	95	94
Ash Content, %	0.48	0.45	0.48	0.46
Colour - L*	84.3	84.6	84.7	85.1
Starch Damage, UCD	23.6	23.9	25.8	26.0
Amylograph Peak Viscosity, BU	562	606	549	577
Farinogram				
Absorption, %	64.4	64.2	63.8	64.1
Dough Development Time (DDT), min	9.0	9.1	6.8	6.7
Stability, min	18.8	26.3	13.6	13.7
Mixing Tolerance Index, (MTI) BU	19	12	19	18
Extensogram				
Maximum Resistance (Rmax), BU	703	717	541	540
Extensibility (length), cm	20.7	20.7	20.4	20.8
Area, cm^2	188	186	140	141
Alveogram				
P (height x 1.1), mm	115	113	129	132
L (length), mm	111	119	105	98
P/L	1.04	0.95	1.23	1.35
W, 10-4 J	480	504	480	471
Ie, %	69.5	70.1	65.3	65.5
Baking (No Time Dough)				
Absorption, %	67	n/a	69	n/a
Mixing Time, min	7.0	n/a	6.4	n/a
Specific Volume, cm^3/g	7.5	n/a	6.9	n/a
Total Bread Score (out of 10)	9.4	n/a	9.4	n/a
Baking (Sponge & Dough)				
Absorption, %	66	n/a	68	n/a
Mixing Time, min	7.8	n/a	7.8	n/a
Specific Volume, cm^3/g	7.4	n/a	6.8	n/a
Total Bread Score (out of 10)	9.6+[c]	n/a	9.8	n/a
Noodles (Fresh White Salted)				
Colour (3h / 24h) L*	n/a	73.9 / 69.5	n/a	75.2 / 69.6
a*	n/a	1.55 / 1.93	n/a	1.29 / 1.76
b*	n/a	24.1 / 22.4	n/a	24.2 / 22.4
Cooked Noodle Max. Cutting Stress g/mm^2				
Cook Time - 3.5 min	n/a	28.4	n/a	26.8

[a] Data are reported on a 13.5% moisture basis for wheat and a 14.0% moisture basis for flour except Alveogram is at 15.0% moisture basis and starch damage is as is.

[b] Refer to crop region maps (Figures 2A, 2B).

n/a Not available (testing will not be conducted).

[c] Break and shred received a higher score (+) as it was bigger compared to the 2020 composite.

Harvest assessment samples representing grain available for export, milling, analytical, and end product analysis conducted by Cereals Canada.

2021-22

CESRW Canada Eastern Soft Red Winter

No. 2 or better

Canada Eastern Soft Red Winter

Quality Parameter [a]	2021 Ontario	2020 Ontario
Wheat[b]		
Test Weight, kg/hL	78.3	78.0
Weight Per 1000 Kernels, g	32.6	34.4
Protein Content, %	9.5	9.7
Protein Content, % (dry matter basis)	11.0	11.2
Ash Content, %	1.35	1.44
Falling Number, s	267	380
Particle Size Index, %	n/a	n/a
Milling Flour Yield Bühler Laboratory Mill		
Total Products Basis, %	74.4	75.3
0.50% Ash Basis, %	77.9	77.8

Quality Parameter [a]	2021 Ontario	2020 Ontario
Flour		
Extraction, %	Straight Grade 74.4%	Straight Grade 75.3%
Protein Content, %	8.3	8.6
Protein Loss, %	1.2	1.1
Ash Content, %	0.43	0.45
Starch Damage, %	16.7	16.3
Amylograph Peak Viscosity, BU	248	692
Farinogram		
Absorption, %	51.1	51.3
Dough Development Time (DDT), min	1.0	1.1
Stability, min	1.3	2.2
Mixing Tolerance Index, (MTI) BU	116	95
Alveogram		
P (height x 1.1), mm	25	25
L (length), mm	113	93
P/L	0.22	0.27
W, 10-4 J	64	61
Solvent Retention Capacity		
Distilled Water, %	55.5	53
Sucrose, %	87.7	99.1
Lactic Acid, %	107.9	103
Sodium Carbonate, &	78.1	76.2
Bake (Sugar Snap Cookie Method)		
Cookie Width (w), mm	81.3	82.1
Cookie Thickness (t), mm	10.8	9.3
w/t Ratio	7.5	8.8
Cookie Spread Factor	75.3	88.3

[a] Data are reported on a 13.5% moisture basis for wheat and a 14.0% moisture basis for flour.

[b] Analysis carried out by the SGS Grains Analytical Testing Laboratory, methods used at SGS are available upon request.

Financial support was provided through the AgriMarketing Program
under the Canadian Agricultural Partnership